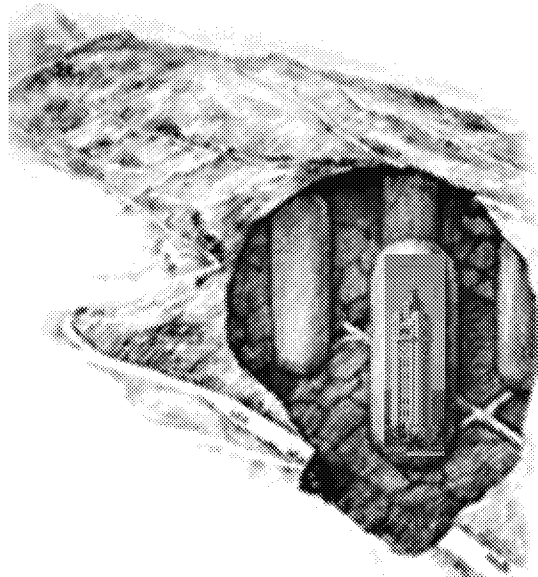


# Red Hill Bulk Fuel Storage Facility

Proposed  
Administrative Order on Consent



# Tonight's Purpose and Agenda

## ▶ Purpose

- ▶ Inform the Public
- ▶ Obtain Public Comment on the Administrative Order on Consent

## ▶ Agenda

- ▶ Informational Presentation
- ▶ Question and Answer Session
- ▶ Public Comment

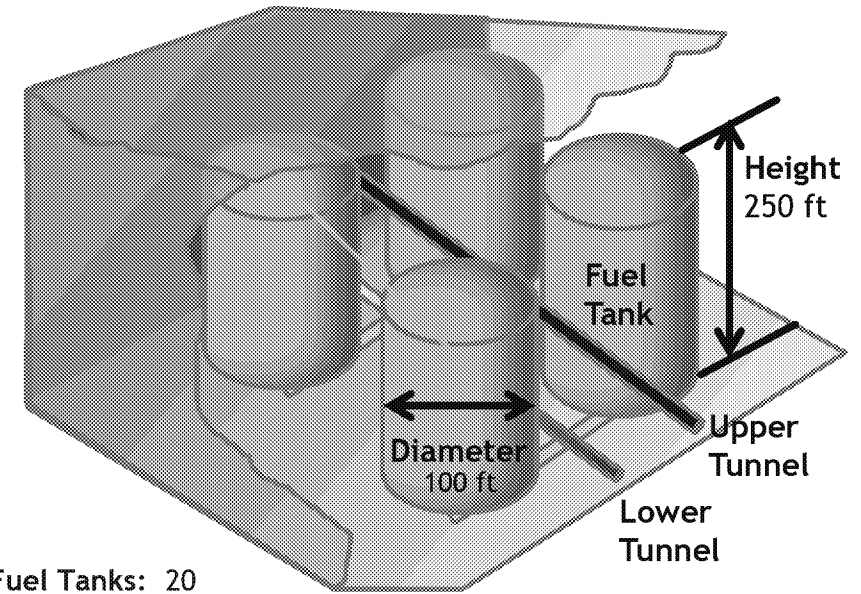
# Informational Presentation

# What is an Administrative Order on Consent (AOC)?

- ▶ Enforceable Order under federal and state environmental statutes
- ▶ Negotiated scope of work to be performed
- ▶ Signed voluntarily
- ▶ Red Hill AOC was negotiated between DOH/EPA and Navy/DLA
- ▶ Includes an Administrative Record
- ▶ Effective upon signature of all Parties

# Red Hill Bulk Fuel Storage Facility

- ▶ Provides fuel for military's Pacific Command
- ▶ “Field-Constructed” 1940 to 1943
  - ▶ 20 vertical cylindrical tanks (250 feet x 100 feet each)
  - ▶ Tank capacity = 12.5 million gallons each
  - ▶ Welded steel plates backed with 2.5 - 4 feet of concrete against basalt rock
- ▶ National Historic Civil Engineering Landmark
- ▶ Located three miles uphill from Pearl Harbor
- ▶ Operators are Navy and DLA



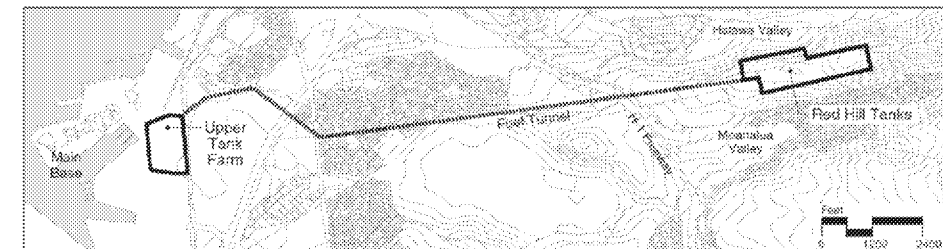
Fuel Tanks: 20

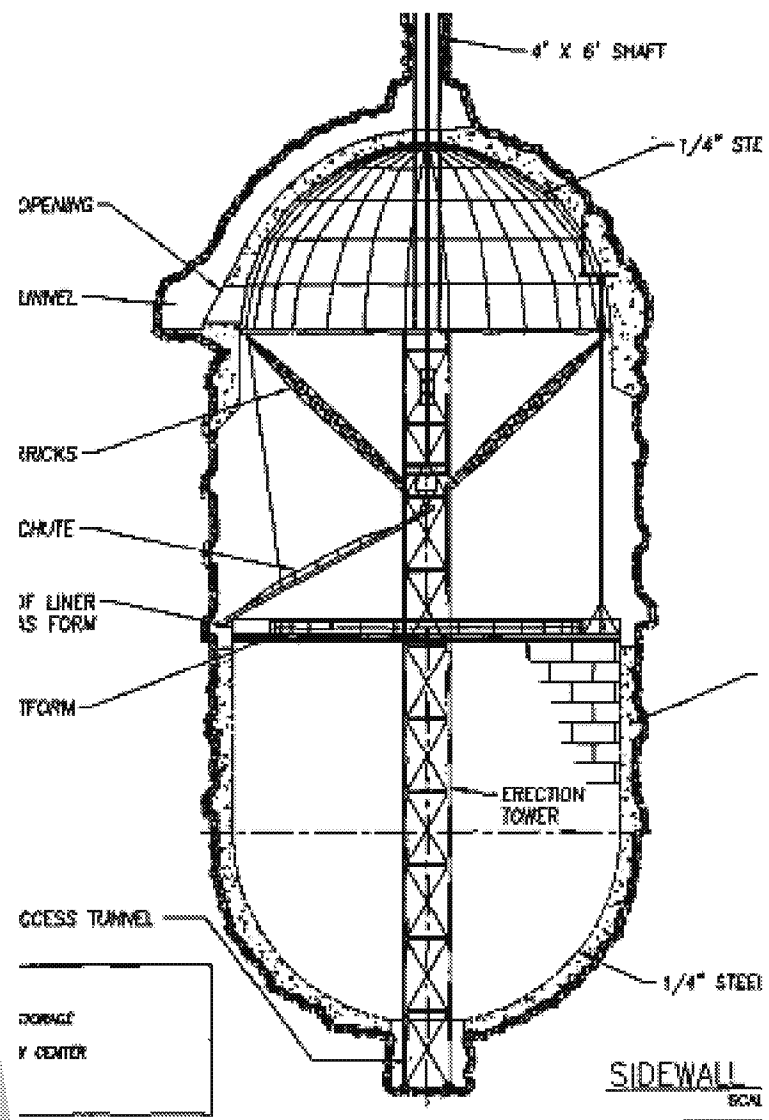
Capacity: 250 million gals

Length of Tunnels: 7.13 miles

Miles From Pearl Harbor to Red Hill Facility: ~3 Miles

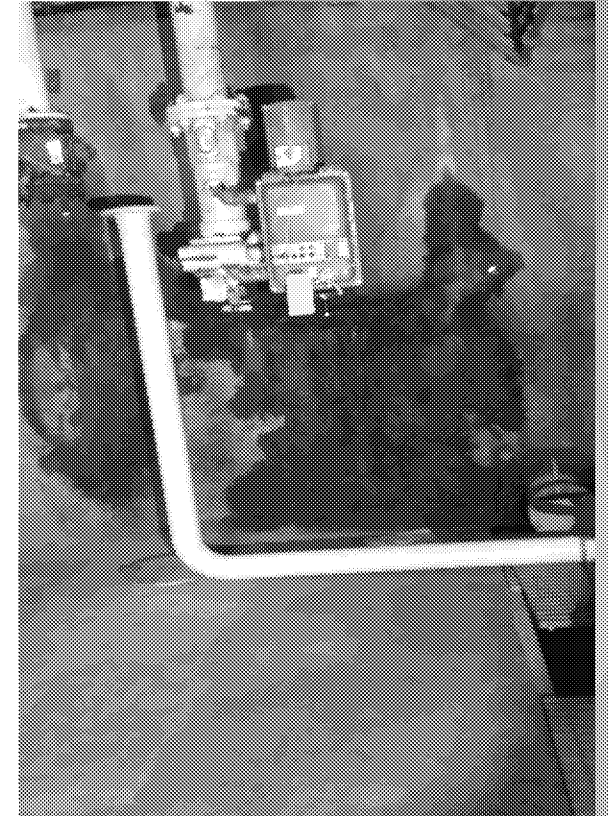
Depth from ground surface to top of tank: 110 to 175 feet





# Release at Tank #5

- ▶ Navy reported a release on January 13, 2014
- ▶ Release occurred after Tank #5 had undergone scheduled maintenance and repair
- ▶ Release of approximately 27,000 gallons of fuel
- ▶ Led to the development of this AOC



# Key Features of this AOC

- ▶ Protects groundwater resources
- ▶ Ensure that Facility is operated in an environmentally protective manner
- ▶ Requires the Navy/DLA to:
  - ▶ Reduce the risk of future fuel releases
  - ▶ Investigate and remediate releases to protect drinking water supplies
  - ▶ Obtain DOH and EPA approval for all work (AOC Section 7)

# How is the AOC enforceable?

- ▶ Establishes required work and schedules for the Navy/DLA (AOC Section 6)
- ▶ Monetary penalties for failure to comply (AOC Section 15)
- ▶ Dispute resolution process places EPA as the ultimate decision maker if needed (AOC Section 14)

# Statement of Work (SOW)

- ▶ The Statement of Work attached to the AOC provides the details of work to be performed and schedules.
  - ▶ Introduction (Section 1)
  - ▶ Tank Inspection, Repair and Maintenance (Section 2)
  - ▶ Tank Upgrade Alternatives (Section 3)
  - ▶ Release Detection/Tank Tightness Testing (Section 4)
  - ▶ Corrosion and Metal Fatigue (Section 5)
  - ▶ Investigation and Remediation of Releases (Section 6)
  - ▶ Groundwater Protection and Evaluation (Section 7)
  - ▶ Risk/Vulnerability Assessment (Section 8)

# General Process for Key Work Tasks

- ▶ All tasks generally follow a similar process:
  - ▶ Study Phase
  - ▶ Decision Document
  - ▶ Implementation
- ▶ The timelines vary by task

# Stakeholder Involvement

- ▶ The SOW provides for two levels of stakeholder involvement
  - ▶ Subject Matter Experts to provide input for scoping meetings or during the review of work products. (Section 1.1)
  - ▶ Summaries of final reports will be made available to the public. (Section 1.2)

# Tank Inspection, Repair, and Maintenance -“TIRM Procedures” (Section 2)

- ▶ Evaluates current tank inspection, repair, and maintenance procedures.
- ▶ Investigates and proposes options for improving current practices
- ▶ TIRM procedures revised based on tank upgrade decisions



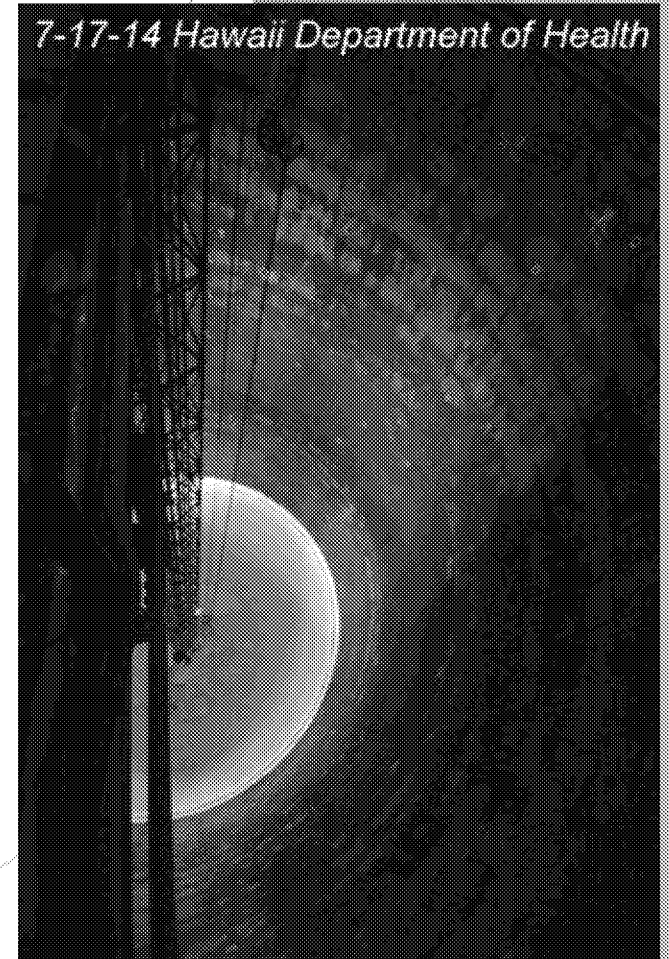
# Tank Upgrade Alternatives (Section 3)

- ▶ Evaluates various tank upgrades alternatives
- ▶ Selects and implements the Best Available Practicable Technology (BAPT) to upgrade the tanks
- ▶ BAPT to be based on consideration of:
  - ▶ Risks and Benefits
  - ▶ Feasibility
  - ▶ Operational Life
  - ▶ Cost



# Tank Upgrade Alternatives (continued)

- ▶ Initial BAPT determination made within two years
- ▶ Pilot technologies may be proposed to fully evaluate a particular technology
- ▶ BAPT will be implemented in five-year phases over 20 years
- ▶ Every five years, BAPT is re-evaluated



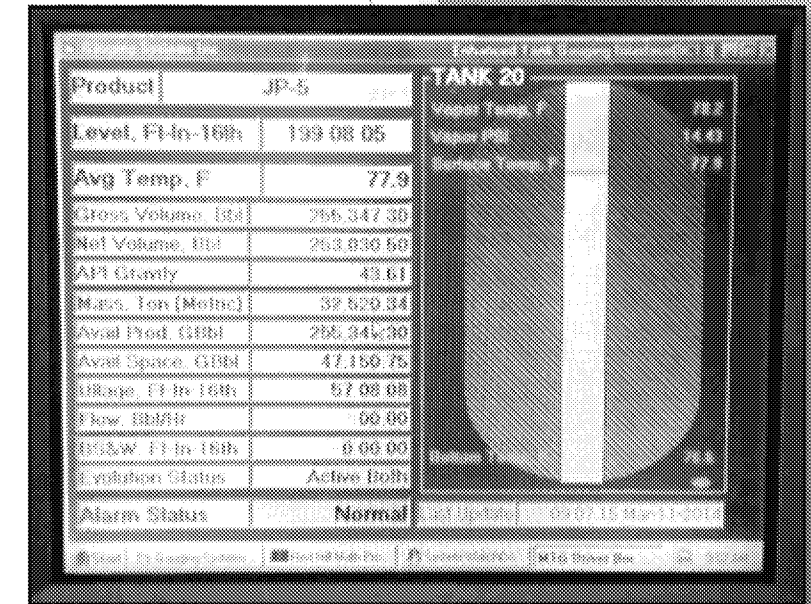
# Tank Upgrade Alternatives (continued)

- ▶ Why 20 year schedule for tank upgrades?
  - ▶ A significant engineering challenge - enormous size of each tank
  - ▶ Facility constraints - tank access, power needs, etc.
  - ▶ Schedule is enforceable
  - ▶ Facility remains operational - ability to continue to meet military fuel needs
- ▶ Tanks that are not upgraded within 20 years will be emptied and taken out of service
- ▶ Due to funding complexities, Regulatory Agencies may allow up to five additional years to complete all upgrades



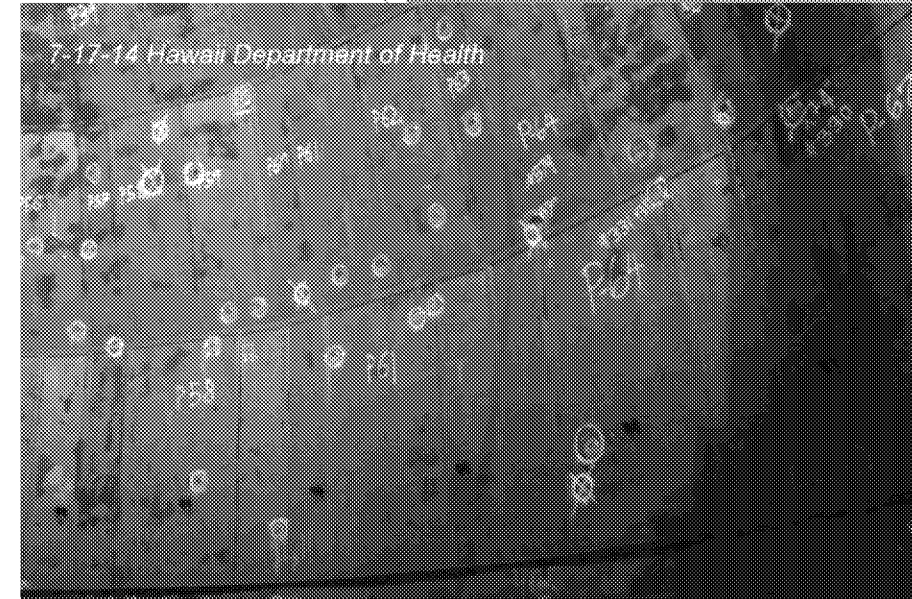
# Release Detection and Tank Tightness Testing (Section 4)

- ▶ Red Hill utilizes three methods to detect releases:
  - ▶ Continuous measurement of fuel levels in the tanks
  - ▶ Tank tightness testing
  - ▶ Monthly soil vapor sampling
- ▶ Navy to immediately increase frequency of tank tightness tests to annually
- ▶ New release detection practices evaluated and the selected method implemented



# Corrosion and Metal Fatigue Practices (Section 5)

- ▶ Report detailing current corrosion and metal fatigue assessment procedures
- ▶ Destructive testing on at least one of the tanks to assess condition of outside of tank wall
- ▶ Based on results, current procedures may be modified



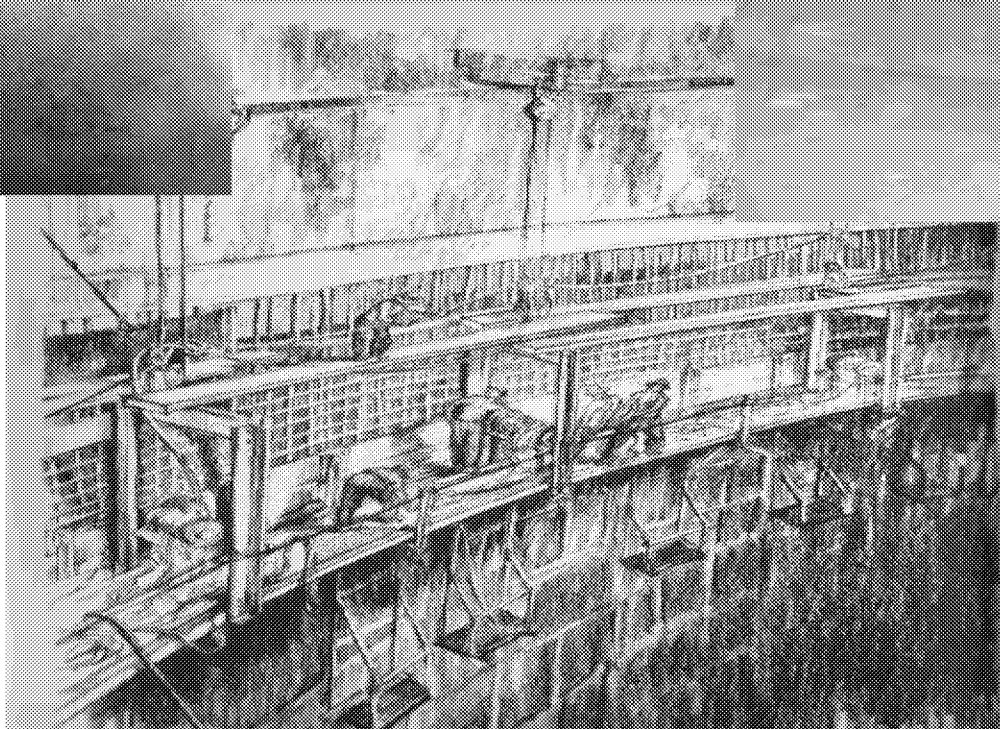
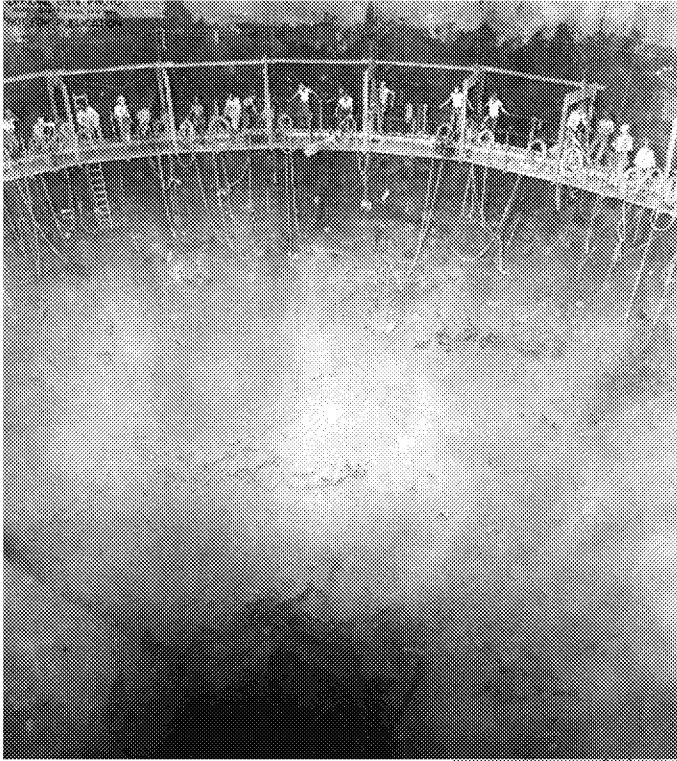
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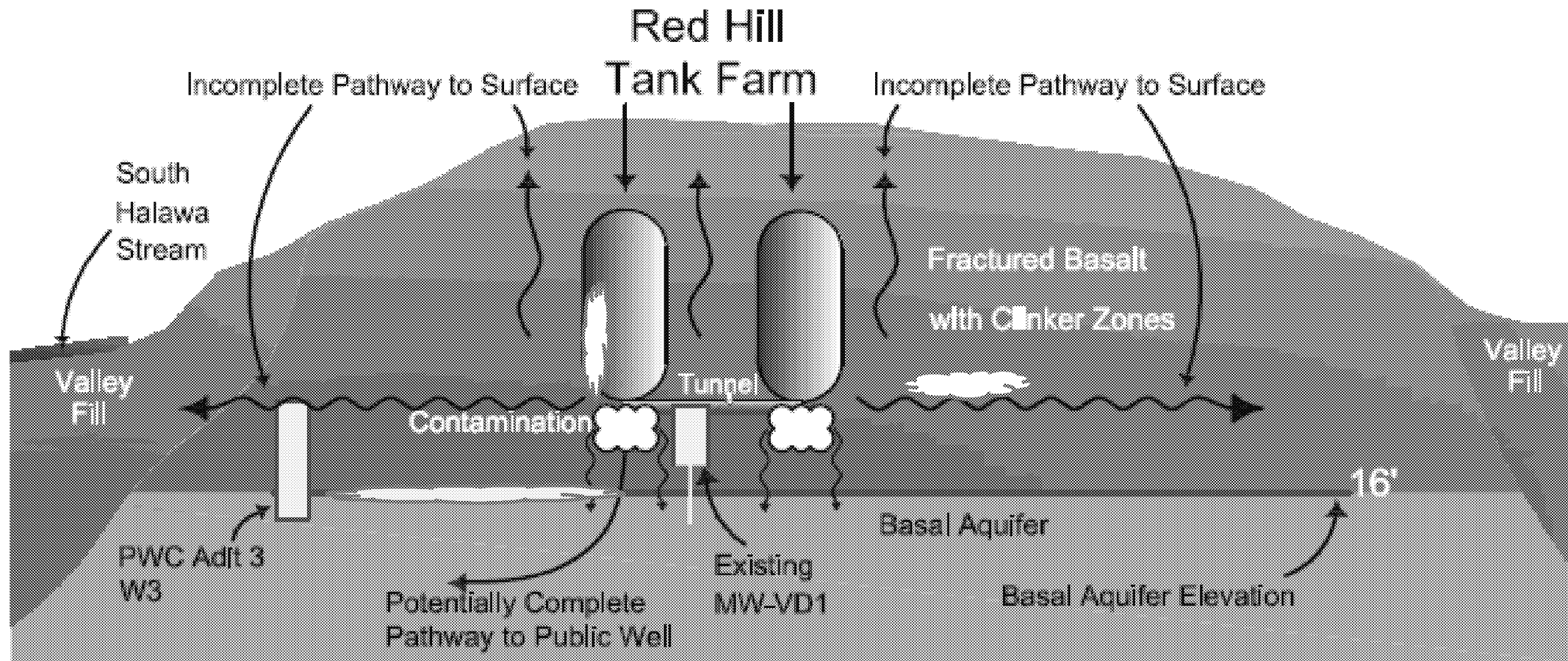
# Investigation and Remediation of Releases (SOW Section 6)

- ▶ Purpose of SOW Section 6 is to evaluate alternatives for investigating and remediating releases from the Facility
  - ▶ Including response to January 2014 release
  - ▶ Considers complex geological setting
- ▶ Selects and implements most appropriate remedial alternative

## Step 1. Finding the Leak



## Step 2. Remove free product (if possible)

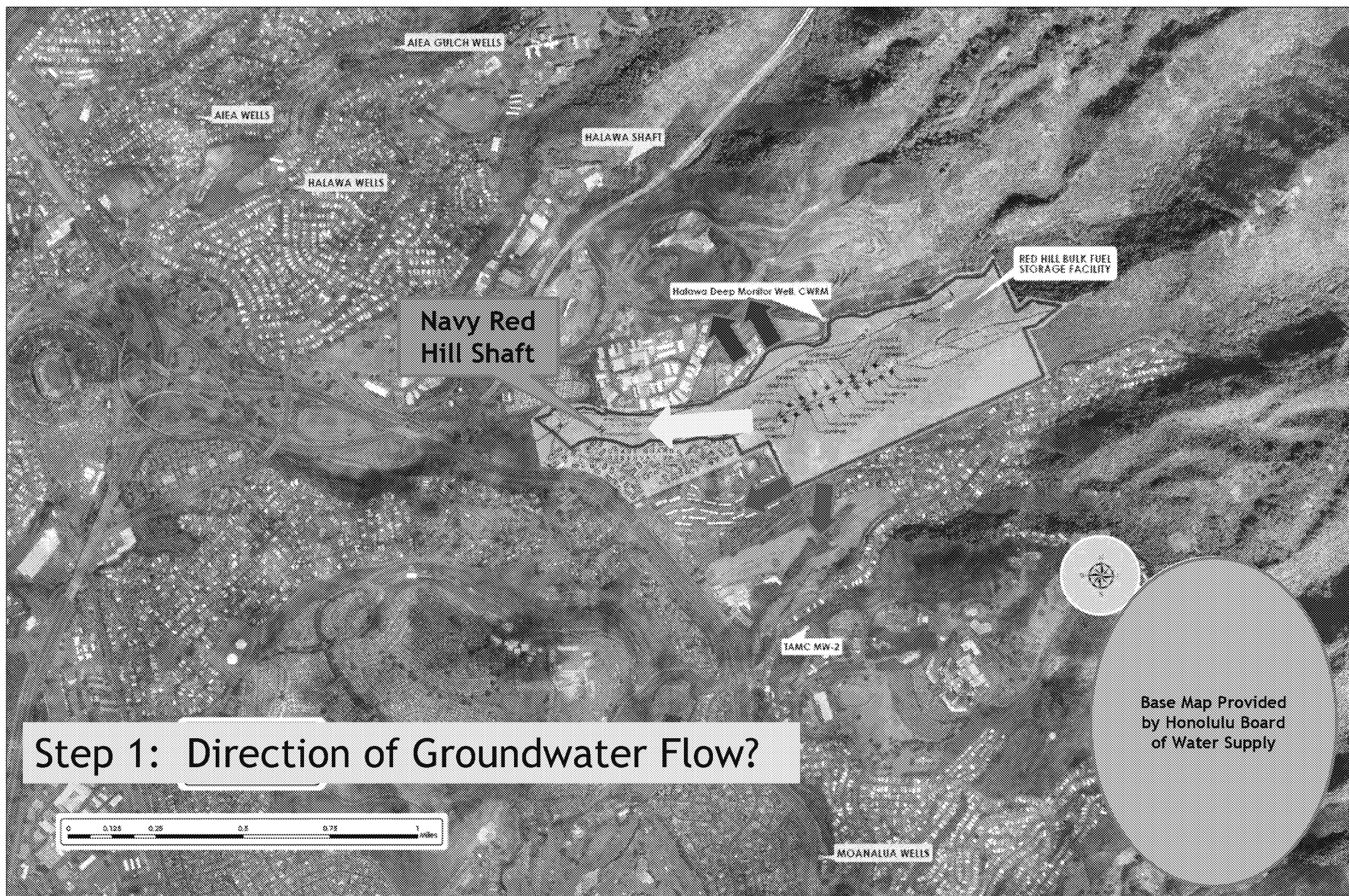


## Step 3. In Situ Cleanup (Remediation)

Not all contamination can found or be removed

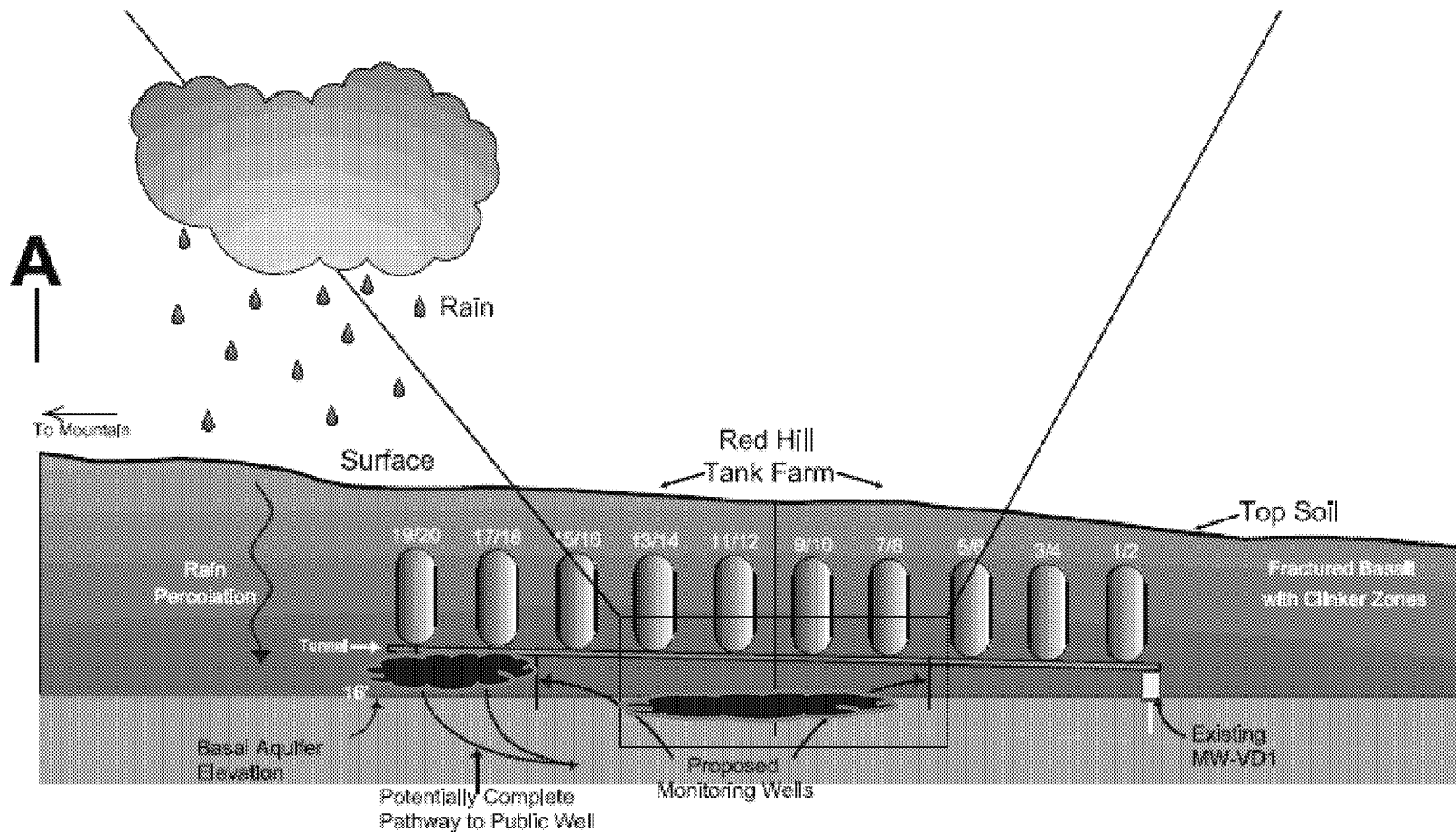
# Groundwater Protection and Evaluation (SOW Section 7)

- ▶ Purpose of SOW Section 7:
  - ▶ Determine the direction and rate of groundwater flow within aquifers around the facility
  - ▶ Estimate what happens if contaminants are released from the facility (fate and transport)
  - ▶ Finalize a groundwater monitoring network



## Step 1: Direction of Groundwater Flow?

## Step 2: What happens to contaminants (fate and transport)



Step 3: Install additional monitoring wells as needed.

# Risk/Vulnerability Assessment (SOW Section 8)

- ▶ Purpose of SOW Section 8 is to assess the level of risk the Facility may pose to groundwater resources from vulnerabilities associated with:
  - ▶ Catastrophic events (e.g., seismic events)
  - ▶ Mechanical and human errors
  - ▶ Risk mitigation and protective measures
- ▶ Includes engineering and environmental factors
- ▶ The assessment will inform selection of BAPT (tank upgrades)

# AOC in Summary

- ▶ Requires Navy/DLA to take steps to ensure that the groundwater is protected
- ▶ Focused on Long-Term prevention of fuel leaks through upgrades to the Facility
- ▶ Enforceable, including penalties
- ▶ EPA/DOH oversight of all work under the AOC

# Next Steps

- ▶ All comments will be reviewed and evaluated by EPA/DOH
- ▶ EPA/DOH decide whether to:
  - ▶ (1) Sign the AOC as is; OR
  - ▶ (2) Re-open negotiations with Navy/DLA based on public comment; OR
  - ▶ (3) Not sign the AOC
- ▶ AOC is finalized only after EPA and DOH signature

# Question and Answer Period at Information Stations

# Public Comment Session